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1. To describe the person-centred KPIs and how they link to the person-centred nursing framework
2. To describe how these KPIs are being further tested internationally across children's services, and the benefits and challenges of this international approach

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Using person-centred key performance indicators to improve paediatric services: an international venture

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Abstract

Nurses are a critical part of the healthcare workforce and provide a significant proportion of care. There is a recognised gap in the evidence base regarding how to measure the impact of care and its contributions to the quality of the patient and family experience. This paper focuses on a set of eight key performance indicators (KPIs), developed from primary research led by a team at Ulster University to reflect core aspects of person-centred practice. The KPIs, having already been tested across a range of practice settings, are currently being implemented and further tested through an international study in the area of paediatrics. This study set out to explore their utility in supporting the development of person-centred practice across a range of services provided to sick children. The study involves children's wards/hospitals in Australia (six sites across three states) and Europe (seven sites across four countries). Its purpose is twofold:

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Keywords: Paediatrics, key performance indicators, patient experience, person-centredness, quality care, developing practice

Introduction

The use of a commonly accepted set of 'nurse-sensitive indicators' continues to be promoted within the nursing literature (Maben et al., 2012). Commonly used indicators are often characterised by negative consequences of care – for example, a patient falling or contracting a hospital-acquired infection. There is an argument, however, that data collected on these outcomes provide limited evidence of the added value of nurses to the care experience. Griffiths et al. (2008) suggest that patient experience of compassionate care is arguably the best measure of the nursing contribution to outcomes. There is a recognised absence in the evidence base of indicators that measure the broader impact of nursing and midwifery care and that contribute to the quality of the patient experience (Griffiths et al., 2008; Collins, 2014). The person-centred key performance indicators (KPIs), which are the focus of the international study reported in this paper, were developed by McCance et al. (2012) and provide a different perspective on the measurement of the nursing and midwifery contribution at practice, organisation level and policy level.

The person-centred KPIs

A core set of eight KPIs focusing on the unique contribution of nursing to the patient experience was developed from primary research undertaken by McCance et al. (2012). The indicators, as presented in Table 1, are somewhat different in their orientation to the majority of other nursing metrics generally reported in the literature; they focus on the patient experience, are reflective of the fundamentals of nursing and midwifery practice, and evidence key aspects of person-centred care. The alignment of the eight indicators to person-centredness can be demonstrated through the use of the person-centred nursing framework (McCormack and McCance, 2010), as illustrated in Figure 1. Six of the KPIs are clustered within the framework's person-centred processes domain, which reflects their orientation towards care delivery. The constructs of the person-centred processes that align to the KPIs include:

- Working with the patient's values and beliefs
- Shared decision making
- Providing holistic care
- Engagement

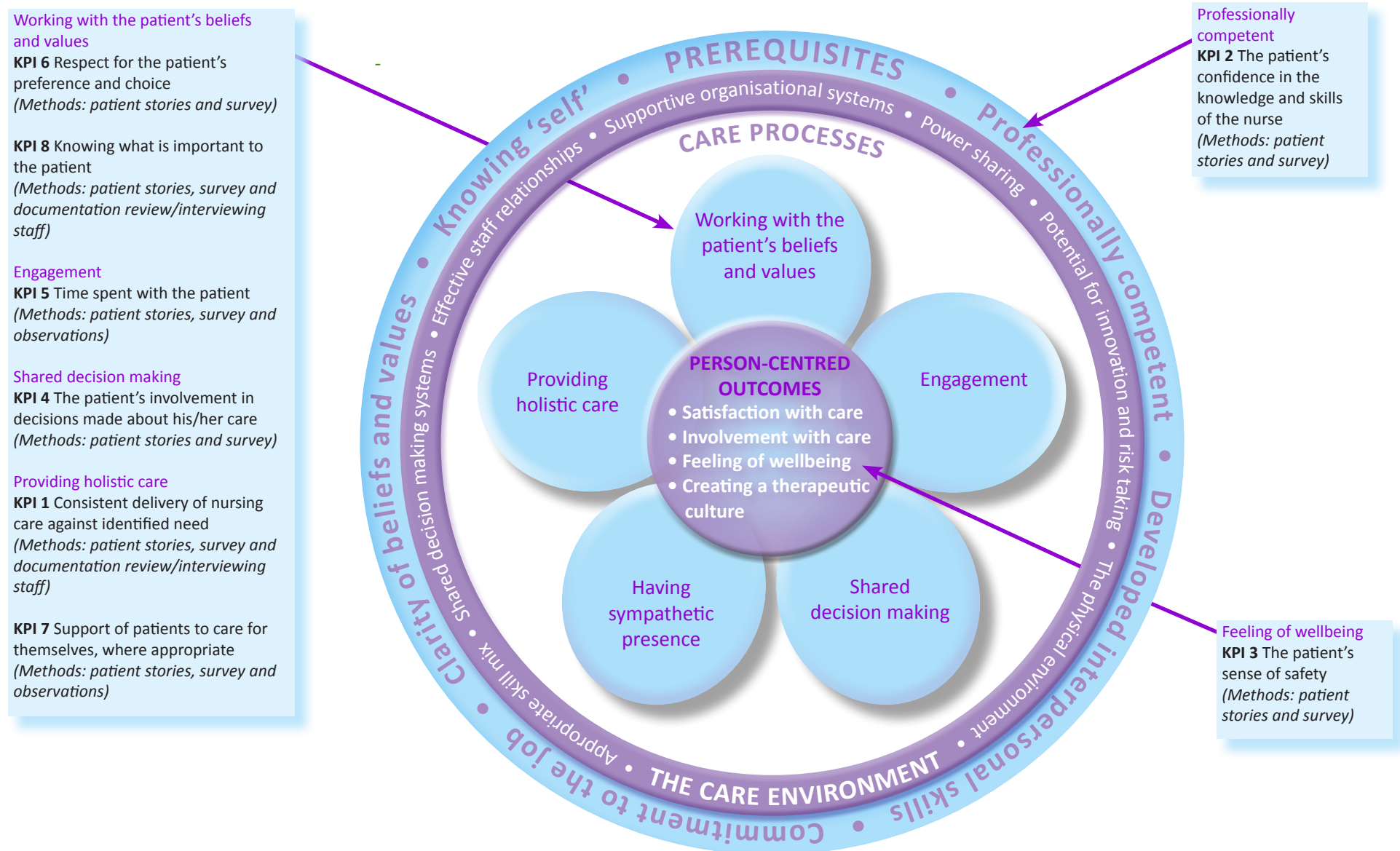
The constructs within the framework that align to the remaining two KPIs are 'professionally competent' from the prerequisites domain and 'feeling of wellbeing' within the person-centred outcomes. It is no surprise that constructs within the care environment are not reflected in the KPIs, since the focus is on patient experience as opposed to the context in which care is delivered.

A framework to measure the KPIs was developed comprising tools to evidence each of the eight indicators. The methods for collecting data included a survey, use of patient stories, observations of practice, review of patient records and staff interviews (see Figure 1). Further research has been undertaken to test their utility and the feasibility of the measurement framework as an approach to evidencing patient experience (McCance et al., 2015). The findings of this revealed the value placed on the evidence generated from the implementation of the indicators, highlighting their potential as a mechanism to illustrate patient experience and engage staff in improving practice. There was also a strong sense that these KPIs were measuring what matters to both patients and nurses, while articulating and demonstrating the positive contribution of nursing and midwifery.

Table 1: The eight person-centred key performance indicators

KPI	Definition
1	Consistent delivery of nursing care against identified need
2	The patient's confidence in the knowledge and skills of the nurse
3	The patient's sense of safety while under the care of the nurse
4	The patient's involvement in decisions made about his/her nursing care
5	Time spent by nurses with the patient
6	Respect from the nurse for the patient's preference and choice
7	Nurse's support for patients to care for themselves where appropriate
8	Nurse's understanding of what is important to the patient

Figure 1: KPIs mapped to person-centred nursing framework (adapted from McCance et al., 2012)



The Paediatric International Nursing Study (PINS)

The international study reported in this paper is a collaboration led by Ulster University and University of Technology Sydney, both members of the International Community of Practice for Person-centredness. The purpose of the study is to develop further and test the person-centred KPIs within a specific context (that is, children's services within acute hospital settings) and on an international stage (Australia, UK, Ireland and Denmark). See Table 2 for details of the sites.

Table 2: Participating sites	
Country	Organisations
Australia	<ul style="list-style-type: none"> • Princess Margaret Hospital for Children, Perth* • Northern Sydney Local Health District† • Nepean Blue Mountains Local Health District† • The Women's and Children's Hospital, Adelaide# • The Sydney Children's Hospitals Network
Denmark	<ul style="list-style-type: none"> • Hans Christian Andersen Children's Hospital, Odense
England	<ul style="list-style-type: none"> • East Kent Hospitals University NHS Foundation Trust† • Great Ormond Street Children's Hospital NHS Foundation Trust
Northern Ireland	<ul style="list-style-type: none"> • The Royal Belfast Hospital for Sick Children, Belfast Health and Social Care Trust# • South Eastern Health and Social Care Trust
Republic of Ireland	<ul style="list-style-type: none"> • Temple Street Children's University Hospital, Dublin
<p>*Included both medical and surgical specialty wards †Paediatric ward within a general hospital #Mixed paediatric medical ward</p>	

The research aim is to explore the utility of the eight KPIs and the related measurement framework in supporting the development of person-centred practice across a range of services provided to sick children. More specifically, the study objectives are to:

- Implement the KPIs and use the outcomes to benchmark children's hospital services internationally
- Explore relationships between the KPIs and other metrics relevant to children's hospital services, such as drug error rates
- Establish how the KPIs can be used to support staff in using evidence to inform their practice and in undertaking localised practice change and innovation
- Review the effectiveness of data collection mechanisms (for example, in terms of resources, access and ethical implications), of data analysis (for example, participatory models that involve staff and or patients/families), and the cogency of varying types of data (for example, numerical incident data, patient narrative and staff satisfaction surveys)
- Establish the views of key stakeholders on the appropriateness and relevancy of the evidence generated from the KPIs as a measure of the quality of service provision
- Develop explanatory hypotheses related to the implementation of the KPIs for further testing through research

A realistic evaluation approach is being used in the study, reflecting the intention to explore not only outcomes but how those outcomes are achieved and why. Data collection methods incorporate a variety of approaches that generate both qualitative and quantitative data. Data have been collected as part of the implementation process but also to evaluate that process. The study is ongoing and is due to complete in December 2015. It is being delivered through six stages, which are summarised in Table 3.

Table 3: Overview of the research stages of the PINS study

Stage	Summary
1: Development and tailoring of the framework for measurement to use across the range of paediatrics settings	This stage focused on the development of the concept and measurement framework, preparing guidelines for the use of measurement tools and establishing the study protocol
2: Implementation of the KPIs and measurement framework (Cycle 1: baseline)	Implementation of the indicators and the measurement framework through a PDSA cycle of data collection, which provided baseline data
3: Supporting practice change	Each site worked with the KPI data from Cycle 1 to identify changes staff wished to make in practice
4: Implementation of the measurement framework (Cycle 2)	Activities undertaken during Cycle 1 were repeated in order to generate a second set of data, followed by one more PDSA cycle
5: Evaluation of the implementation process	The KPIs and the measurement framework will be evaluated using multiple methods
6: Hypothesis generation	The findings will be used to generate hypotheses as a basis for further testing in subsequent studies

At this stage you may wish to listen to the [radio interview with Professor Val Wilson](#) to gain further insight into the experience of PINS.

Opportunities and challenges

The innovative nature of the study has presented the collaborative partnership with exciting opportunities, but the international nature and scale of the project has also presented significant challenges. This section offers a reflective account of the opportunities and challenges that have been experienced by the project team and participating sites to date, including:

- Securing initial engagement and maintaining momentum
- Addressing research governance and ethical issues
- Maximising connections across a range of international sites for the purposes of shared learning
- Providing a supportive infrastructure and obtaining funding

Securing initial engagement and maintaining momentum

Potential participating sites were identified from existing collaborations and the study began with two workshops, each with 12 participants. One was held in Belfast in December 2012 for potential European partners and the second in Sydney in January 2013 for Australian partners. A stakeholder analysis was undertaken as a starting point using 'claims, concerns and issues' drawn from Fourth Generation Evaluation (Guba and Lincoln, 1989). The aim of this was to develop consensus among stakeholders who previously might have held different and even conflicting constructions. The focus of the evaluation was on the implementation of the KPIs within paediatrics internationally, with claims being favourable assertions about the topic and its implementation, concerns being unfavourable assertions about the topic and its implementation, and issues being the questions that reflect what any reasonable person might ask about the topic and its implementation. We worked with participants to identify ways of overcoming the issues identified in order to make the research feasible in their contexts. Examples of issues included:

- Aspects of implementing the measurement framework
- Securing resources to run the project
- Securing buy-in at different levels within their organisation

Participants, however, were convinced at the outset of the value of the KPIs and the approach to measurement. Their views echoed, and further reinforced, the findings from the initial testing phase undertaken by McCance et al. (2015), as discussed previously. All participating sites signed up to

the project after the introductory workshops and, to date, there has been a very low attrition rate, with only one site choosing to withdraw. A high level of engagement has been sustained throughout the project, with some sites recruiting further sites to engage in the KPI work outside of the PINS. That said, there has been variable progress over time across the sites, often due to staff changes and other organisational factors, which will be further explored during the overall evaluation of the implementation process.

Addressing research governance and ethical issues

The involvement of two universities and 11 healthcare organisations, across five countries, each with different regulatory requirements for research governance and ethics approval, was complex. A common ethics application and related documentation, such as participant information sheets, were developed by the study leads and tailored as required by the project leads for each of the different jurisdictions. What was most interesting was the variation in the level of scrutiny required for approval. Denmark secured approval very quickly, with its ethics body indicating that formal approval was not necessary as PINS was not a biomedical study including human tissue. The UK application, involving four sites, took the longest; it required a single ethics application, followed by organisation-specific governance approval, which had to be in place before the study began. This variation in governance processes resulted in a staggered start across the sites, which was hard to manage in terms of the overall governance of the research, but did allow for troubleshooting to the benefit of the sites that started later. The challenge throughout the life of the project is to ensure that all sites adhere to ethically approved processes and that no protocol deviation creeps in; this has been monitored by the project lead at each site. One strategy used by the research team to ensure consistency was the development of a resource folder containing all relevant documentation for delivery of the approved study, as well as data collection tools, tips and suggestions, and support materials such as a DVD to help guide collection of patient and family stories

Providing a supportive infrastructure and obtaining funding

Securing funding for the project was a challenge from the outset; we believe this was partly due to the untested nature of what was being proposed and the lack of a track record for the collaboration. Several start-up grant applications were submitted for the overall project but were unsuccessful, although there was more success in obtaining small amounts of funding at organisational level. For example, staff at Princess Margaret Hospital in Perth were able to secure a new investigator grant of \$80,000 to undertake the study across six sites, and money was sourced through volunteer funding at Sydney Children's Hospitals Network to provide support for the overall project in the form of a research assistant, who was a pivotal part of the research team. Furthermore, the role of project lead at participating sites was a key one and was generally supported in all organisations by in-kind funding where no external funds were obtained, further underlining the perceived value of the study by stakeholders. The development of clear roles and key responsibilities within the teams was undertaken at the initial workshops in Belfast and Sydney, and was one of the success factors that kept the project moving forward in the absence of any real financial investment. The roles for each site included a named executive lead, a local project coordinator and a local project associate. What has been achieved to date is testimony to the commitment of participants and their desire to demonstrate what the project could deliver on an international platform.

Maximising connections across the international landscape

One would have expected that communicating effectively across the globe would have been the most tricky of challenges but this was not the case. Various media were used to bridge the geographical distance, including email, Skype, electronic newsletters, video conferencing and teleconferencing. This experience reinforces the huge potential of technology to build international partnerships. We would argue, however, that face-to-face group activities at strategic points on the journey are also important, such as for securing initial engagement at the beginning of the project and for planning for an international PINS research meeting and conference to bring all the sites together and to

disseminate the achievements to date. This event was held in Sydney in early June 2015, with only one site unable to participate.

Future work

This paper provides insight into the development and further testing of KPIs aligned to the person-centred nursing framework (McCormack and McCance, 2010), highlighting an innovative approach to measuring nursing practice. These KPIs are discussed in the context of an international nursing study involving a range of paediatric services across Europe and Australia, the implementation of which presented both benefits and challenges. The outcomes from this work will contribute further to the evidence base for measuring patient experience and generating the kind of data that matter most to nurses in practice, and will be reported in subsequent papers. It is our intention to build on the success of this international collaboration, with a focus on consolidating its outcomes through ongoing dissemination and celebration, developing a strategy to support transferability and identifying related research through hypotheses generation and testing.

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